IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

PACIFIC INDEMNITY COMPANY 15 Mountain View Road Warren, NJ 07061-1615 Plaintiff, v. ALFRED KEMP, Individually and d/b/a KEMP PLUMBING P.O. Box 1322 Pembroke, MA 02359 and MARTIN SANDBORG, Individually and d/b/a SANDBORG PLUMBING AND HEATING 13 Liberty Street Sandwich, MA 02563, Defendants.	C.A. No.: 04-11975-RWZ BBO # 552588

MEMORANDUM OF LAW IN SUPPORT OF DEFENDANT'S, ALFRED KEMP, INDIVIDUALLY AND D/B/A KEMP PLUMBING, MOTION IN LIMINE TO PRECLUDE TESTIMONY FROM PLAINTIFF'S EXPERT THOMAS KLEM

This memorandum is submitted by the defendant Alfred Kemp, Individually and d/b/a Kemp Plumbing ("Kemp"), in support of his motion to preclude any opinions or expert testimony from Thomas Klem (hereinafter, "Klem") and also requests a Daubert Hearing as to the reliability of any such testimony or opinions. As grounds therefore, Kemp states that, if offered, such testimony would be entirely speculative and would not meet the reliability test set forth in Fed. R. Evid. 702 and established in Daubert v.

Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589 (1993) and Kumho Tire Company, Ltd. v. Carmichael, 526 U.S. 137 (1999).

Factual Background.

This is a property subrogation action involving a fire discovered in the early morning hours of Friday, December 20, 2002 at a carriage house owned by Roger and Michelle Marino, located at 256 Westfield Street, Dedham, Massachusetts. The carriage house on the Marino's property was in the final stages of an extensive renovation project when the fire occurred. Plaintiff alleges that the fire was caused by the carelessness of defendant Alfred Kemp ("Kemp"), a plumber, while using a torch to unsolder pipe joints in the cabinet under the kitchen sink of the carriage house on the afternoon of Thursday, December 19. Kemp has consistently denied the fact that he used a torch anywhere in the carriage house on December 19 and all of the witnesses identified and deposed in this case have testified that no one observed Kemp soldering on December 19th.[1]

[1] With respect to the witness testimony in the case, Al Kemp has stated numerous times that he did soldering work under the kitchen sink in the Marino carriage house on Wednesday, December 18, 2002, turned the water in the carriage house on at that time and pressurized all of the pipes in order to test his soldered connections, and left the water in the carriage house on at the end of the day. He did not turn it off again on Thursday, December 19, 2002, and did no soldering in the carriage house on Thursday, December 19, 2002. (Kemp Depo., attached as Exhibit E to Ryan Affidavit at 45, 61,-63, 65, 77, 8, previously filed in this case at Docket #19.) Kraig Magnussen, the contractor employed by Roger Marino to oversee all of the various subcontractors involved in the renovation of the main house and the carriage house on the Marino property, testified that Al Kemp always soldered properly and he never saw Al Kemp burn any cabinet he had been soldering in. (Magnussen Depo. attached as Exhibit F to Ryan Affidavit at 99.) Magnussen further testified that although he recalled Al Kemp soldering under the kitchen sink on Wednesday, December 18, 2002, he never saw him doing any soldering on Thursday, December 19, 2002. (Magnussen Depo. attached as Exhibit F to Ryan Affidavit at 116, 148, 149.) Magnussen further testified that he believed the water in the carriage house was on Thursday, December 19, 2002. (Magnussen Depo. attached as Exhibit F to Ryan Affidavit, at 111,115.) Marty Sandborg, the plumber for the Marino renovation project for whom Al Kemp was working, testified that the water in the carriage house was on and pressurized at the time the fire started in the carriage house on Friday, December 20, 2002. (Sandborg Depo., attached as Exhibit G to Ryan Affidavit at 73-74.) Stephen Driscoll, a plumbing friend of Al Kemp who stopped by the Marino carriage house late in the afternoon of Thursday, December 19, 2002, testified that he checked the water in the carriage house at that time and found that it was on and pressurized. (Driscoll Depo., attached as Exhibit H to Ryan Affidavit, at 32.) There are no witnesses in the case who have testified that they saw Al Kemp using a soldering torch at any time during the day on Thursday, December 19, 2002. There are no witnesses in the case who have testified that the joints of all the water

Despite all of the evidence to the contrary, plaintiff's expert, fire investigator Thomas Klem (hereinafter "Klem"), opines that none of the witnesses are telling the truth and that Kemp must have unsoldered the valves, pipings and fittings beneath the sink late in the afternoon on December 19th. Klem further claims that photographs and physical inspections following the fire establish that one of the valves/fittings from under the sink was no longer in place on the piping and was lying loose on the bottom of the kitchen cabinet, beneath the sink. Klem concludes that the loose valve/fitting must have been unsoldered by Kemp prior to the fire and could not have come loose as a result of the fire.[2] Plaintiff relies upon the conclusions of Klem to argue that Kemp used a torch to unsolder pipe joints on the afternoon of December 19, 2002, and, ultimately, caused the fire to ignite some nine hours later.

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piping in the carriage house were not intact as of the time of the fire on December 20, 2002. There are no witnesses in the case who have testified that the water in the carriage house and in the piping under the sink in the carriage house was not turned on and pressurized at the time the fire started on Friday, December 20, 2002.

[2] On the other hand, Mr. Kemp's fire cause and origin expert, Timothy J. Myers, Ph.D., states that the cause of the fire cannot be determined based on information currently available; that a region near the right side of the kitchen is a possible area of origin although the fire could have started in adjacent areas of the building; that the fire did not originate under the sink or in the wall behind the sink as alleged by Mr. Klem; that Mr. Kemp did not perform soldering in the kitchen on the afternoon before the fire; that at the time of the fire all of the joints of the water piping were intact, water was turned on in the carriage house, and the water piping under the sink was pressurized; and two soldered joints became disconnected due to the heat of the fire and lowering of the soldering melting temperature due to contact with lead in the leaded-brass components. (Report of Timothy Myers dated March 7, 2006, at 40, a copy of which has previously filed with the Court attached to the Affidavit of John J. Ryan, Jr. in Support of Defendant's Opposition to Plaintiff's Motion in Limine to Exclude Certain Testimony From Defendant Kemp's Experts Quinn Horn and Timothy Myers (hereinafter Ryan Afd. I).) Mr. Kemp's metallurgy expert, Quinn C. Horn, Ph.D., states in his report that at the time the fire began all joints of the water piping were intact; the heat from the fire was sufficient to melt the solder at the copper/brass interface, but not at the copper/copper soldered joints; that the pressure within the water line provided sufficient force to separate the joint between the copper tube and the brass valve when the solder melted; and the separation of the joint between the copper tube and the brass compression fitting followed. (Report of Quinn Horn dated March 7, 2006, at 38, a copy of which has previously been filed with the Court with attached to Ryan Afd. I.)

For the reasons set forth below, the opinions and conclusions of Klem are entirely speculative, wholly unsupported by any evidence and not based upon a reliable methodology. As such, these opinions of Klem must be precluded.

Argument

Klem's Testimony or Opinions Should Be Excluded Because They Are Not Based on a Reliable Methodology

To be admissible, expert testimony must meet the requirements of Fed R. Evid. 702. U.S. v Corey, 207 F. 3d. 84 (D. Mass. 2000). Rule 702 provides:

> If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue a witness qualified as an expert ...may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. The Court is required to act as a "gatekeeper," admitting expert opinion evidence only after first determining that the evidence is reliable. Daubert v. Merill Dow Pharmaceuticals, 509 U.S. 579, 589 (1993). When evaluating expert testimony to determine reliability the trial judge must assess "whether the reasoning or methodology underlying the testimony is scientifically valid and...whether that reasoning or methodology properly can be applied to the facts in issue." American Computer Innovators, Inc, 74 F. Supp. 2d at 66-67, quoting Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 592-93 (1993).

For an expert's opinion to be termed "scientifically valid," the opinion must be "grounded in methods and procedures of science," and "supported by appropriate validation – *i.e.* 'good grounds,' based on what is known." Daubert, supra at 590. "A

verdict may not be based on conjecture and surmise, and expert opinion does not help if it is demonstrated that it rests on speculation." Payton, et al. v. Abbott Labs, et al., 780 F.2d 147, 156 (1st Cir. 1985), quoting Swartz v. General Motors Corp., 378 N.E.2d 61, 65 (Mass. 1978).

In Pappas v. Sony Electronics, Inc., the U.S. District Court for the Western District of Pennsylvania set forth the factors that a court must consider in determining whether expert testimony is reliable under "the second Rule 702 factor – whether the expert's opinion is based on a reliable methodology." 136 F.Supp. 2d 413 (W.D.Pa., 2000) (holding that testimony from plaintiff's cause and origin expert is inadmissible under Daubert following a two-day Daubert hearing). The factors include:

> (1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; (8) the non-judicial uses to which the method has been put. Id., citing In re Paoli Railroad Yard PCB Litigation, 35 F.3d 717, 742 n.8 (3d Cir. 1994).[2]

As set forth below, Klem's investigation failed to satisfy any of the above factors and, therefore, his testimony and opinions should be precluded.

Klem alleges that he conducted his on-site analysis of the carriage house using standard fire investigation protocols set forth in NFPA (National Fire Protection Association) 921 Guide for Fire and Explosion Investigations. Klem's initial report dated July 29, 2005, p.1 attached as Exhibit A to the Affidavit of Christopher G. Betke, hereinafter "Klem 1." The NFPA 921 sets forth the standard fire investigation procedures and techniques utilized by fire investigators. It is a method which is based on the use of

[2] In re: Paoli Railroad Yard PCB Litigation has been cited with approval by United States v. Shay, 57 F3d 126, 133 (1st Cir. 1995).

the scientific method, has been subject to peer review, and provides standards to control the technique's operation. The defendant does not dispute, and, in fact, agrees, that the NFPA 921 is the established reliable methodology to be used in fire investigations. However, even a cursory review of Klem's report illustrates that Klem deviated significantly from the process set forth by the NFPA 921 when investigating the fire that is the subject of this litigation. Moreover, Klem failed to provide any alternative methodology to support his findings. Therefore, his opinions are unsupported by any valid and reliable methodology as required by Daubert.

A. Klem's Area of Origin is the Least Damaged Area of the Kitchen

Klem established the kitchen as the general area of fire origin based on the observation that it was "the most extensively fire damaged area of the building." Klem 1, p. 8. Klem then pinpointed the area under the kitchen sink as the exact origin of the fire after he created a "**hypothetical** ignition scenario" that involved Al Kemp using a plumber's torch on Thursday, December 19, 2002, to ignite combustible materials under the kitchen sink. Klem 1, p. 10 (emphasis added). However, Klem is not able to identify, using accepted scientific methodology, how it is that he determined the origin of the fire to be under the sink when all of the accepted measures indicate otherwise.

Vast portions of the carriage house were consumed by the fire, which burned for at least three hours. Virtually all cabinets in the kitchen were entirely consumed by the fire - except the cabinet under the sink where Klem contends the fire started. As is obvious from the photographs taken after the fire, the central portion of the back of the under-the-sink cabinet is not consumed. Attached as Exhibit B to the Affidavit of Christopher G. Betke are photographs taken by Klem of the front and back of the under-

the-sink cabinet following the fire. Rather, the central portion of the back of that cabinet appears to have been attacked by fire from the right and from the left as the bricks in those areas are exposed. For the bricks to be exposed in those areas, the fire had to have first consumed the plywood, polyethylene vapor barrier, and insulation layers of the wall. In addition, the photographs clearly depict that the bottom of the cabinet underneath the sink is hardly burned at all.

Not only is the conclusion reached by Mr. Klem entirely inconsistent with common sense, and his own logic in determining the kitchen as the general area of origin, it is also inconsistent with scientific methodology:

> Where the fire's destruction took place, and where it did not, constitutes the burn pattern. In seriously damaged structures, the question 'Where was the destruction most complete?' accomplishes the same end. We know that fire generally travels upward and outward, leaving in the absence of barriers or unusual fuel conditions, a v-shaped or conical pattern in the structure it leaves behind. In the absence of active suppression, fire will usually have time to burn longer at its point of origin than at places subsequently involved by spreading flames. *As a result, destruction will be more extensive in that area, all other things being equal.* Kirk's Fire Investigation [5th Edition 2002], p. 181 (emphasis added).

Notwithstanding this basic tenet of fire cause and origin investigation that "destruction will be more extensive in that area [point of origin]," Klem points to an area of origin [under the sink] with the least destruction in the entire kitchen. Having done so, Klem must come up with a generally accepted, verifiable theory to explain why this particular fire stands the basic tenet of cause and origin investigation on its head. He has failed to do that. Instead, Klem perfunctorily states that the fire patterns and damage found in the kitchen were consistent with the fire starting underneath the sink but does not explain his conclusion or provide any physical description or physical evidence that would lead to such a conclusion. Klem 1, p. 17; Klem 2, p. 9. Moreover, Klem proclaims

the area underneath the sink is the area of origin in the face of photographic evidence that clearly shows classic v-shaped burn patterns both to the right and to the left of the sink.

The generally accepted method for determining the area of ignition is set forth by the NFPA 921. Section 6.17.7 of NFPA 921 states:

> the progress and direction of fire spread along a wall can often be identified and traced back to its source by an examination of the relative heights and burned away shapes of wall studs left standing after a fire. In general, shorter and more severely charred studs will be closer to a source of fire than taller studs.

Attached as Exhibit C to the Affidavit of Christopher Betke is a copy of Figure 6.17.7 contained in NFPA 921 and intended to illustrate the science and methodology set forth in Section 6.17.7. Even a cursory review of the photographs from the scene of the fire (Exhibit B) and NFPA Figure 6.17.7 (Exhibit C) establishes that the "hypothetical ignition scenario" espoused by Mr. Klem is entirely inconsistent with the methods and protocol of NFPA 921. In the photographs one can clearly see that the wall stud closest to Klem's ignition site remains in place while other wall studs further to the right were almost entirely consumed by the fire. Klem fails to address this deviation from the generally accepted and reliable method set forth by the NFPA 921 as well as fails to specifically identify any literature that he relied upon to form his opinion about the area of origin.

By failing to outline his method or technique for determining the area origin in detail, Klem makes it impossible for any other expert to test his hypothesis under Daubert. See Pappas, 136 F. Supp. 2d at 421. Additionally, Klem's failure to provide details of his methodology necessarily means that he cannot prove that his method was generally accepted in the fire investigation community or that there was any relationship between his technique and any pre-established reliable method such as the NFPA 921.

In Chester Valley Coach Works v. Fisher-Price, Inc., defendants challenged the admissibility of the testimony of plaintiffs' cause and origin expert on the grounds that it was unreliable according to Daubert and Kumho. 2001 U.S. Dist. LEXIS 15902; CCH Prod. Liab. Rep. P16, 185, (U.S.D.C., E.D.Pa., 2001) (A copy of the decision is attached hereto for the convenience of the Court). The court ultimately determined, following a Daubert hearing, that testimony from plaintiffs' cause and origin expert would be excluded in large part because it was clear to the court that

> the methodologies [plaintiff's expert] used in his fire investigation deviate frequently and significantly from those required by the Basic Methodologies chapter of NFPA 921, the authoritative guide for fire investigations. These deviations have left us with serious doubts as to the reliability of the methodologies that [plaintiff's expert' did follow and the conclusions that he reached. Id.

Specifically, plaintiffs' expert's deviations included determining the cause of the fire before establishing the origin and formulating hypotheses before all data had been collected. Id. at *16. As the court noted, "An investigator who goes into a fire investigation with preconceived notions of what he expects to find is much more likely to find it than is an investigator who goes in with an open mind." Id.

Here, since Klem's identification of the area of origin goes against all of the generally accepted methodologies for determining areas of origin, e.g. V-burn, burn patterns, etc., there must be some other explanation for the fact that Klem focused on the area underneath the kitchen sink. Representing the plaintiff, Pacific Indemnity Company, Klem focused on finding an origin and cause of the fire for which Pacific Indemnity Company could recover. Therefore, Klem apparently narrowed his focus to the area underneath the sink as a result of his creating the "hypothetical ignition scenario" involving Al Kemp and his torch. As Klem stated:

> As a result of our determinations, observations and other ignition scenario determinations (i.e. consideration and eliminations), we began to focus on an ignition scenario that involved a plumber's torch igniting combustible materials under the kitchen sink…Such a hypothetical ignition scenario (at this point) was determined to be consistent with the fire growth patterns documents in this report. Klem 1, p. 10.

In other words, Klem appears to have determined a potential cause for the fire and then outlined an area of origin that fit into his hypothetical scenario. By doing so, Klem not only eliminated all other potential areas of origin which were left virtually unexamined, but he violated both NFPA 921 § 17.1.2, by fixing the origin of a fire despite the lack of conclusive evidence, and NFPA 921 § 18.2.1, by identifying the cause of the fire without physical evidence before determining the area of origin.

B. There is No Physical Evidence of An Ignition Source

Klem was unable to find any physical evidence of an ignition source in the kitchen – the general area of origin. As a result, by a process of elimination he hypothesized that Mr. Kemp must have been using a torch on the afternoon of Thursday, December 19th which caused the materials in the wall to smolder overnight before igniting in the carriage house. However, the NFPA 921 argues against such use of the process of elimination unless the area of origin of the fire is "clearly defined":

> Any determination of fire cause should be based on evidence rather than on the absence of evidence; however, when the origin of a fire is clearly defined, it is occasionally possible to make a credible determination regarding the cause of the fire, even when there is no physical evidence of the ignition source available. This finding may be accomplished through the credible elimination of all other potential ignition sources, provided that the remaining ignition source is consistent with all known facts. NFPA 921 § 18.2.1.

Although the NFPA 921 does not define the phrase "clearly defined," the common sense meaning of the phrase suggests that the origin of the fire should be easily perceptible. Here, the area of origin pinpointed by Klem is not clearly defined or easily perceptible. In

fact, the area beneath the sink is the *least* damaged portion of the kitchen making it, per the NFPA 921, an unlikely area of origin. This makes the use of the process of elimination approach adopted by Klem inappropriate per NFPA 921. Moreover, contrary to the mandate of NFPA 921, Klem's alleged ignition source (i.e. use of the torch the day before) is not consistent with all known facts. NFPA 921 § 18.2.1.

Klem's two main conclusions in his expert rebuttal report, on which the rest of his theory rests, are that Mr. Kemp was soldering late in the day on Thursday, December 19, 2002 and that the water to the carriage house was off at the time of the fire. Expert Rebuttal of Thomas Klem dated March 23, 2006, p. 14, attached as Exhibit D to the Affidavit of Christopher G. Betke, hereinafter "Klem 2." However, not only is there is no physical evidence to support those conclusions but those two conclusions are in direct contradiction with all of the sworn testimony in the case.

According to all sworn testimony in the case, no one saw Al Kemp soldering on Thursday, December 19, 2002. Kemp himself has consistently denied, including under oath, to soldering on the day before the fire. Moreover, Al Kemp, Kraig Magnussen, Stephen Driscoll and Martin Sanborg all testified that the water in the carriage house was turned on and pressurized on December 19th. Klem appears to base his conclusion that the water was turned off in the carriage house at the time of the fire on statements from Dedham Fire Department personnel at the scene who claim that they did not see water coming from the sink area during the fire. Klem 1, p.14. However, Robert Cullinane, the caretaker of the Marino's property, testified that he shut off the utilities to the carriage house, including the water supply, from a nearby utility building on the property during the fire. Deposition of Robert Cullinane, p. 7-9, 49-50.

Furthermore, NFPA 921 § 12.2.3 provides that the investigator "should determine the status of all utilities (i.e., electric, gas, and water) within the structure under investigation…" Klem failed to follow this protocol in the days after the fire which prevented him from discovering that the water main inside the carriage house was in the "open" position. Deposition of Martin Sandborg, p. 69, 70-71.[3] Clearly, the fact that the water was on at the time of the fire completely invalidates Klem's entire theory of the cause and origin of the fire. More specifically, Klem's theory that Kemp was soldering under the sink on December 19th in order to remove the valve/fitting that was found disconnected after the fire, and during that process started the fire, is invalidated because the water was on in the carriage house. If that valve/fitting was disconnected while the water was on, then the carriage house would have flooded from the water that would have flown from the disconnection. Therefore, since the evidence shows that the water was on at the time of the fire, and the carriage house was not flooded, the valve/fitting must not have been disconnected at the time of the fire. If the valve/fitting disconnected during the fire, then it was not disconnected by Kemp on December 19th, thus substantiating Kemp's claims that he was not using his torch on that day.

Klem bases his theory of cause and origin in this case on conclusions that are unsupported by any physical evidence and are contradicted by sworn testimony in the case. According to NFPA 921 § 4.3.4: "Subjective or speculative information cannot be included in the analysis, only facts that can be proven clearly by observation or

[3] Martin Sandborg observed the water main in the "open" position after the fire when he was tasked with making sure that the boiler connection inside the carriage house was turned on in order to save the systems in the basement of the carriage house from freezing in the inclement winter weather. (Sandborg Depo., 70). Sandborg explained that because the water main inside the carriage house was on, the water pipes in the carriage house would have been pressurized at the time of the fire and would have remained pressurized until the time that the water was shut off by Mr. Cullinane from a remote utility building on the property during the course of fighting the fire. (Sandborg Depo., 69-73).

experiment." Thus, Klem fails to follow the established reliable methodology of fire investigation because his analysis is founded upon an unsupported hypothetical that was neither observed nor tested in any kind of experiment. Moreover, section 4.3.6 of NFPA 921 specifically provides that if a hypothesis cannot withstand examination, it should be discarded and a new hypothesis should be tested. Klem's "hypothetical ignition scenario" does not withstand examination because it has not, nor can it be, tested. Yet, Mr. Klem never examined the possibility of a new hypothesis. More specifically, he never examined the possibility that the fire may have resulted from an electrical source elsewhere in the kitchen or elsewhere in the carriage house.

In Klem 2, Klem states that he hired electrical engineer, Donald Galler, to examine only the electrical wiring in the area under the sink. Klem 2, p. 5. At no time did Mr. Klem instruct Mr. Galler to evaluate the electrical wiring elsewhere in the kitchen or the carriage house. In fact, Donald Galler states in his expert rebuttal: "I was not trying to determine all possible electrical causes of the fire independent of the fire origin investigation. I was ruling out electrical activity in the area identified by T. J. Klem & Associates, Inc." Expert rebuttal of Donald Galler dated March 22, 2006, attached as Exhibit E to the Affidavit of Christopher G. Betke (emphasis in original). Therefore, all other possible electrical ignition sources in the kitchen were left unexamined. As noted in an article by Dennis Smith regarding determining fire cause in the absence of proof, "Making any determination beyond stating what has been considered, examined and eliminated is speculation." Smith, p. 318.

C. Klem's Fire Spread Scenario is Unsubstantiated and Untested

In determining how the fire spread, Klem again failed to follow any established reliable methodology. Klem simply states in his reports that the fire ignited under the kitchen sink, smoldered for some nine hours and then burst into flames elsewhere in the carriage house. However, Klem does not explain in detail how he reached this conclusion nor does he provide any satisfactory scientific basis for this assertion.

i. No Evidence To Show that Polyethylene Barrier Would Burn in "Fuse-Like" Manner

In working backwards to make the fire patterns fit his preconceived opinion that Kemp caused the fire, Klem suggests that the fire burned away from the kitchen sink in some kind of "fuse-like" movement of the fire via the polyethylene vapor barrier. Klem 2, p. 6. Once again, however, Klem provides no substantiation and no established methodology or testing to support his claim that the polyethylene vapor barrier would burn in a "fuse-like fashion." Id. Klem does not point to any scientific journals or articles that suggest that the vapor barrier burns in a "fuse-like fashion." In fact, Klem only subjected the polyethylene plastic vapor barrier to one open air, open flame test in which the barrier was found to "ignite easily" and spread vertically. Klem 1, p.15. Not only did this test not prove that the polyethylene barrier would burn in a fuse-like manner but it is generally not credible under the NFPA 921. According to NFPA 921 § 20.5.2, for a test to be credible, it must use "materials and assemblies that are suitable exemplars of actual materials and assemblies, as well as conducting experiments that reflect the relevant conditions of the scene at the time of the fire." Therefore, this test is inapplicable as it did not replicate the conditions that existed in the wall at the time of the fire, i.e. not open air.

Even so, it does not support Klem's theory since the vapor barrier burned vertically not horizontally, i.e. not in a fuse-like fasion.

ii. No Evidence to Show that Polyethylene Barrier Wall Structure Would Smolder

Klem opines that the fire which consumed the carriage house "smoldered" for some nine hours before breaking out and being discovered by Mr. Marino at 2 a.m. Again, this is nothing more than an unsupported statement designed to fit the evidence to his theory. That is not the scientific method. Mr. Klem again provides no established methodology subject to peer review, tests or established standards to substantiate his claim that a fire in a structure such as the Marino carriage house would "smolder" for nine hours before breaking out. To the contrary, Klem's only attempt at substantiation is a reference to the fact that "a large pile of wood chips, sawdust or coal can smolder for weeks or even months." Klem 2, p. 11. Rule 702 makes clear that an expert can testify to an opinion only if "the witness has applied the principles and methods reliably to the facts of the case." Fed. R. Evid. 702. Mr. Klem's contention that his theory may work with wood chips, sawdust or coal does not in any respect support his theory in the case at hand.

In determining whether a proposed expert's testimony will assist the trier of fact, "the court must first determine whether the proposed testimony is relevant and fits the facts of the case." U.S. v. Shay, supra at 132-133. As the Court in Shay noted:

> The concept of "fit" requires that a valid connection exist between the expert's testimony and a disputed issue. *Daubert, 113 S. Ct. at 2796*. Judge Becker, who coined the term, illustrates the concept with the following example. If a plaintiff contends that he or she developed cancer after being exposed to chemical X and seeks to support that contention with expert testimony that chemical X causes cancer in animals, the testimony will not fit the facts of the case and should be excluded unless the plaintiff also offers reliable expert testimony that results

> observed in the animal studies are transferable to humans. *In Re Paoli R.R. Yard PCB litig. 35 F.3d 717, 743 (3d Cir. 1994),* cert. denied, *115 S. Ct. 1253 (1995).* Id. at note 5.

On this point, Klem has only proven that some materials do smolder in the way that he suggests. However, he provides no evidence that the materials in the carriage house walls, i.e. the insulation, polyethylene barrier or plywood, would smolder in the same way as wood chips. Furthermore, Klem's failure to test his smoldering theory is incredible considering that he himself admits that smoldering "is a complex phenomenon that cannot be easily quantified. It is highly dependent on the geometry of the fuel and the amount of ventilation present." Klem 2, p. 11.

Not only does Klem fail to provide evidence that the materials in the walls of the carriage house would smolder in the same way as the wood chips, sawdust and coal he refers to in his report but Klem's only so-called test of the "exemplar" polyethylene barrier illustrates that the barrier would not have smoldered. As set forth above, Klem's testing of the barrier showed that the barrier was easily ignitable and will burn in the following ways:

> It will move upward as products of combustion move to preheat the material above it, enhancing vertical fire spread, and next, as more and more of the product burns, it will begin to drip and continue to burn until this portion of the material is consumed. Klem 1, p. 15.

In his expert rebuttal, Klem further described the burning properties of the polyethylene during the fire:

> The precipitating liquefied, burning polyethylene drops onto horizontal surfaces within the combustible wall assembly resulting in prolonged flaming exposure to the other combustibles within the wall assembly; greater than might, at first, be expected. This phenomenon resulted in the ignition of wood construction members of the wall assembly and other adjacent lightweight combustibles. Klem 2, 12.

Clearly, common sense dictates that the vertical fire spread of a material that is "readily ignitable" would be rapid rather than slow. Klem 1, p. 20. Moreover, NFPA 921 provides that the same material will burn faster in a vertical configuration than in a horizontal configuration. NFPA 921 § 20.6.2.1. Regardless, Klem is bound to demonstrate a basis for his theory.

Klem attempts to explain the slow progression by pointing to "the limited air supply within the space (and other variables)." Klem 2, p. 11. However, Klem again fails to explain how he arrived at the conclusion that there was a limited air supply in the space and fails to identify the "other variables" that influenced his analysis. Therefore, with no evidence that the materials in the wall would have smoldered, Klem has no way to justify his claim that the fire progressed in the walls over several hours.

As set forth in Pappas,

> In fact, it is because all scientific endeavors are somehow unique that Daubert places an emphasis on methodology and not conclusions. For an expert's, testimony to be admissible under Daubert, he must offer more than just his belief that every investigation is different. He must demonstrate that he employs a reliable methodology to each of these different investigations. 136 F. Supp. 2d at 425.

In other words, the testimony and opinions of an expert must rest on more than just the *ipse dixit* of the expert. See id. Klem's investigation has revealed that he failed to follow the method set out by the NFPA 921 and Klem has not indicated that he used any other generally accepted method which has been subject to peer review. He bases his testimony and opinion solely on his hypothetical, unsupported, and untested theories and his experience and training as a fire investigator.

Conclusion

As set forth above, Klem's conclusions rest solely on his own speculation and conjecture. He provides scant evidence upon which his conclusions are based and his opinions rest on premises that are contradicted by all the sworn testimony in the case. Because Klem fails to provide any detailed explanation of his findings, it is impossible for anyone else to test his hypotheses or to judge the reliability of his methods.

WHEREFORE, Alfred Kemp, Individually and d/b/a Kemp Plumbing, requests this Court preclude expert testimony from Thomas Klem and for a Daubert hearing as to the reliability of any such testimony or opinions, together with such other and further relief the Court deems just and proper.

Respectfully submitted,
The Defendant,
ALFRED KEMP, Individually and
d/b/a KEMP PLUMBING
By his attorney,

/s/ Christopher G. Betke
Christopher G. Betke, BBO# 552588
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CERTIFICATE OF SERVICE

I, Christopher G. Betke, hereby certify that on March 20, 2007, I served a copy of the within document via electronic filing to: Matthew H. Feinburg, Esq., Feinberg & Kamholtz, 125 Summer Street, 6th Floor, Boston MA 02110; Daniel Q. Harrington, Esq., Cozen & O'Connor, 1900 Market Street 3rd Floor, Philadelphia, PA 19103; Philip Tierney, Esq., Finnegan, Underwood, Ryan & Tierney, 22 Batterymarch Street, Boston, MA 02109.

/s/ Christopher G. Betke
Christopher G. Betke